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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
NGUYEN, PHU K	

ART UNIT	PAPER NUMBER
2673	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/664,836	DITT ET AL.	
	Examiner	Art Unit	
	Phu K. Nguyen	2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *17 September 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-33* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13 and 15-33* is/are rejected.

7)☒ Claim(s) *14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Phu K. Nguyen

PHU K. NGUYEN
PRIMARY EXAMINER
GROUP 2300

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *1/23/04 & 7/15/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-5, 7-11, 15-18, 20-26, 28-32 are rejected under 35 U.S.C. 102(e) as being anticipated by TAJIMA et al. (6,557,558).

As per claim 1, Tajima teaches the claimed "computer-aided presentation method for a 3D subject", comprising: "determining a 2D basic image of the subject by a computer; momentarily outputing the subject 2D basic image as an image via an output system" (Tajima, the MRI image 601; column 13, lines 58-59); "determining a 2D basic presentation of a 3D volume data set of the subject by the computer; momentarily outputing the 2D basic presentation of the 3D volume data set as an image via an output system" (Tajima, the endoscopic image 603; column 13, line 34), "wherein the

basic image and the basic presentation are output simultaneously, but spatially separate from one another by the computer" (Tajima, the images 601 and 603 are output simultaneously, but spatially separate from one another by the computer's display 102 – figure 6).

Claim 2 adds into claim 1 "determining the basic presentation in real time by the computer" (Tajima, column 13, lines 64-68).

Claim 3 adds into claim 1 "changing the basic presentation interactively" (Tajima, column 14, lines 1-8 – the medical treatment plan information 609 provides changes of the endoscopic image 603 during the surgical operation).

Claim 4 adds into claim 1 "determining the basic image is performed utilizing a basic acquisition geometry, wherein the basic acquisition geometry is configured to be changed at any time" (Tajima, the changes of the endoscopic image 603 is configured by the surgical manipulator 609).

Claim 5 adds into claim 4 "shifting the basic acquisition geometry by an operator into a basic acquisition position" (Tajima, the changes of the endoscopic image 603 is configured by the surgical manipulator 609); and "at least one of the following: a) producing, by the computer, an acoustic or optical basic confirmation to the operator when the basic acquisition geometry is in the basic acquisition position; and b)

outputting a mechanical basic confirmation to the operator when the basic acquisition geometry is in the basic acquisition position" (Tajima, column 15, lines 21-67).

Claim 7 adds into claim 1 "considering at least one piece of information related to the volume data set by the computer at a corresponding location of the basic image" (Tajima, column 14, lines 1-8).

Claim 8 adds into claim 1 "considering at least one location-dependent piece of information related to the subject by the computer at a corresponding location of the basic presentation" (Tajima, the surgical treatment manipulator 609 contains the location-dependent information – column 13, lines 39-43).

Claim 9 adds into claim 1 "determining a 2D auxiliary image of the subject that is different from the basic image of the subject by the computer" (Tajima, the ultrasonic scanner image 606); "temporarily outputting the auxiliary image by the computer as an image via the output system; and simultaneously outputting the auxiliary image of the subject with the basic presentation and the basic image, but spatially separate from these" (Tajima, figure 6).

Claim 10 adds into claim 9 "determining the auxiliary image is performed utilizing an auxiliary acquisition geometry, wherein the auxiliary acquisition geometry is configured to be changed at any time" (Tajima, column 13, lines 59-61).

Claim 11 adds into claim 9 "manually shifting the auxiliary acquisition geometry by an operator into an auxiliary acquisition position" (Tajima, the surgical-treatment manipulator 607), and "at least one of the following: a) producing, by the computer, acoustic or optical auxiliary confirmation to the operator when the auxiliary acquisition geometry is in the auxiliary acquisition position; and b) outputting a mechanical confirmation to the operator when the auxiliary acquisition geometry is in the auxiliary acquisition position" (Tajima, column 13, lines 59-61).

Claim 15 adds into claim 9 "determining a 2D auxiliary presentation of the volume data set that is different from the basic presentation of the volume data set by the computer" (Tajima, the ultrasonic image 607), "temporarily outputting the auxiliary presentation by the computer as an image via the output system; and simultaneously outputting the auxiliary presentation with the basic image and the basic presentation, but spatially separate from these" (Tajima, figure 6).

Claim 16 adds into claim 15 "the auxiliary presentation is spatially separate from the auxiliary image" (Tajima, column 13, lines 47-52).

Claim 17 adds into claim 15 "determining the auxiliary presentation in real time

by the computer" (Tajima, the computer performs the surgical treatment manipulator on the image 607 – column 14, lines 48-61).

Claim 18 adds into claim 15 "the auxiliary presentation can be changed interactively" (Tajima, the computer interactively performs the surgical treatment manipulator on the image 607 – column 14, lines 16-17, 48-61).

Claim 20 adds into claim 15 "determining a 2D supplementary presentation of the volume data set independent of both the basic presentation and the auxiliary presentation by the computer" (Tajima, the MRA image 602); "temporarily outputting the supplementary presentation by the computer as an image via the output system; and simultaneously outputting the supplementary presentation with the basic image, the basic presentation, and the auxiliary presentation, but spatially separate from these" (Tajima, the images 601, 602, 603, 606, 607 are simultaneously but separately displayed – figure 6).

Claim 21 adds into claim 20 "supplementary presentation is spatially separate from the auxiliary image" (Tajima, the images 601, 602, 603, 606, 607 are simultaneously but separately displayed – figure 6).

Claim 22 adds into claim 20 "determining the supplementary presentation in real time" (Tajima, the MRA image 602 – figure 6 or 9 is displayed in real time).

Claim 23 adds into claim 20 "the supplementary presentation can be changed interactively" (Tajima, the MRI image 601 and the MRA image 602 are interactively displayed in figure 9).

Claim 24 adds into claim 1 "the images and the presentations are respectively output each via its own output device" (Tajima, the MRI, ultrasonic, or endoscopic image is outputted from its own device – figure 3 showing separate devices for each type of mage).

Claim 25 adds into claim 24 "at least one output devices is a monitor of the output system" (Tajima, monitors 310-312, figure 3).

Claim 26 adds into claim 1 "the presentations of the volume data set are sections or perspective projections" (Tajima, section MRI image 601).

Claim 28 adds into claim 9 "at least one of to any the basic image and the auxiliary image is determined via x-ray radiation or via ultrasound" (Tajima, ultrasonic image 606).

Claim 29 claims "computer program for implementation" (Tajima, control instructions to perform the operations; column 4, lines 21-26, 40-43) of a presentation

method according to claim 1; therefore, they are rejected under the same reason.

Claim 30 claims "computer programmed with a computer program" (Tajima, control instructions to perform the operations; column 4, lines 21-26) according to claim 29; therefore, they are rejected under the same reason.

Claim 31 claims "computer configured as a control computer for an imaging modality" (Tajima, system is an image modality – column 8, line 48 to column 9, line 20) of claim 30; therefore, they are rejected under the same reason.

Claim 32 claims "a control computer" (Tajima, computer 111 for medical treatment planning; column 4, lines 30-33) according to claim 31; therefore, they are rejected under the same reason.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 6, 12-13, 19, 27, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over TAJIMA et al. (6,557,558) in view of Hall et al. (2003/0181809).

It is noted that both of the present application and Hall application claim Priority Dates of their Germany applications in which the Hall application pre-dates the present application.

Claim 6 adds into claim 1 "determining the basic presentation and basic image as perspective projections such that their projection parameters coincide" which Tajima does not teach. However, Hall teaches that the 3D medical image information, similar to Tajima's 3D medical MRI, MRA, ultrasonic image database, has the form of perspective projection (Hall, the 3D medical VRT (perspective volume-rendering projection) or MIP (perspective maximum intensity projection) image (Hall, paragraph 18). It would have been obvious to implement Tajima's 3D medical image database with a perspective VRP image database and display images with coincide projected parameters because the availability of these image databases for the 3D reconstructed images (Hall, page 2, column 2, lines 51-65; and the coincide projection parameters are used for the display in the display 13).

Claim 12 adds into claim 9 "determining the basic image is performed utilizing a basic acquisition geometry, wherein the basic acquisition geometry is configured to be changed at any time" (Tajima, the changes of the endoscopic image 603 is configured by the surgical manipulator 609); and "determining the auxiliary image is performed utilizing an auxiliary acquisition geometry, wherein the auxiliary acquisition geometry is configured to be changed at any time" (Tajima, column 13, lines 59-61). It is noted that Tajima does not teach "the basic acquisition geometry exhibiting a basic image main

axis, and the auxiliary acquisition geometry exhibiting an auxiliary image main axis, wherein the basic image main axis and the auxiliary image main axis intersecting at a common intersection point at an angle of intersection a". However, Tajima's medical image sections 601, 603, 606, 607 exhibiting their own axis; and further, Hall shows that these axis's intersect at a common point (Hall, figure 3; the intersection of the axis of projections). It would have been obvious to have these axis intersect at a common point because the medical projections or sections are taken at different directions (Hall, paragraph 38).

Claim 13 adds into claim 12 "determining the auxiliary image relative to the basic image, such that the angle of intersection is 90 degrees" which Tajiama does not teach. However, Hall shows that these axis's orthogonally intersect at a common point (Hall, figure 3; the intersection of the axis of projections at an angle of 90 degrees). It would have been obvious to have these axis intersect at a common point because the medical projections or sections are taken at different directions including orthogonal directions (Hall, paragraph 38).

Claim 19 adds into claim 15 "determining the auxiliary presentation and the auxiliary image as perspective projections and such that their projection parameters coincide" which Tajima does not teach. However, Hall teaches that the 3D medical image information, similar to Tajima's 3D medical MRI, MRA, ultrasonic image database, has the form of perspective projection (Hall, the 3D medical VRT (perspective

volume-rendering projection) or MIP (perspective maximum intensity projection) image (Hall, paragraph 18). It would have been obvious to implement Tajima's 3D medical image database with a perspective VRP image database and display images with coincide projected parameters because the availability of these image databases for the 3D reconstructed images (Hall, page 2, column 2, lines 51-65; and the coincide projection parameters are used for the display in the display 13).

Claim 27 adds into claim 1 "the images of the subject being perspective projections" which Tajima does not teach. However, Hall teaches that the 3D medical image information, similar to Tajima's 3D medical MRI, MRA, ultrasonic image database, has the form of perspective projection (Hall, the 3D medical VRT (perspective volume-rendering projection) or MIP (perspective maximum intensity projection) image (Hall, paragraph 18). It would have been obvious to implement Tajima's 3D medical image database with a perspective VRP image database and display images with coincide projected parameters because the availability of these image databases for the 3D reconstructed images (Hall, page 2, column 2, lines 51-65; and the coincide projection parameters are used for the display in the display 13).

Claim 33 adds into claim 32 "the imaging modality is an x-ray system" which Tajima does not teach. However, Hall teaches that the 3D medical image information, similar to Tajima's 3D medical MRI, MRA, ultrasonic image database, has the form of CT or X-ray image (Hall, the 3D medical X-ray image – paragraph 32). It would have been obvious to implement Tajima's 3D medical image database with a X-ray image database (Hall, figure 2 and paragraph 30).

Claim 14 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The allowable feature in claim 14 is "maximizing the angle of intersection a in terms of design conditions so that it is as large as a critical angle that is smaller than 90.degree., and determining the auxiliary image relative to the basic image such that the angle of intersection a is the same as the critical angle. "

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phu K. Nguyen whose telephone number is (571) 272 7645. The examiner can normally be reached on M-F 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, bipin Shalwala can be reached on (571) 272 7681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Phu K. Nguyen
February 10, 2006

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